

GWF - Construction Site Modeling Emissions

HENRIETTA PEAKER PROJECT								
Construction Maximum Total Hourly Emission Rates (90% PM10 Control for Equipment > 100hp)								
TAIL PIPE EMISSIONS ("EXHAUST")	NO_x		CO		PM₁₀		SO₂	
	(lb/hr)	(g/s) ¹	(lb/hr)	(g/s) ¹	(lb/hr)	(g/s) ¹	(lb/hr)	(g/s) ¹
Sitework (Earthwork and Civil) Equipment Construction Emissions								
Maximum Hourly	1.9	0.236	11.8	1.492	---	---	0.16	0.020
Maximum 3-Hour ²	---	---	---	---	---	---	0.16	0.020
Maximum 8-Hour ²	---	---	11.8	1.492	---	---	---	---
Maximum 24-Hour ³	---	---	---	---	0.083	0.010	0.13	0.016
Annual ⁴	0.50	0.063	---	---	0.023	0.0029	0.05	0.006
Erection Support Equipment Construction Emissions								
Maximum Hourly	25.1	3.164	24.0	3.028	---	---	2.49	0.314
Maximum 3-Hour ²	---	---	---	---	---	---	2.49	0.314
Maximum 8-Hour ²	---	---	24.0	3.028	---	---	---	---
Maximum 24-Hour ³	---	---	---	---	0.76	0.096	2.08	0.262
Annual ⁴	6.05	0.762	---	---	0.21	0.026	0.59	0.074
TOTAL EMISSIONS (used as model input)								
Maximum Hourly	27.0	3.399	35.9	4.520	---	---	2.7	0.334
Maximum 3-Hour ²	---	---	---	---	---	---	2.7	0.334
Maximum 8-Hour ²	---	---	35.9	4.520	---	---	---	---
Maximum 24-Hour ³	---	---	---	---	0.84	0.1062	2.2	0.278
Annual ⁴	6.6	0.825	---	---	0.23	0.02936	0.6	0.081
FUGITIVE DUST EMISSIONS								
(Onsite Construction)		PM₁₀						
Construction Dust (PM₁₀) Emissions- Plant Site								
Maximum 24-Hour ⁵				0.48		0.0605		
Construction Dust (PM₁₀) Emissions - Plant Site								
Annual ⁶				0.17		0.0214		

¹ Grams per second (g/s) = lbs/hr * 0.126

² 3-hour Lbs/Hr and 8-hour Lbs/Hr = Maximum Lbs/Hr

³ 24-hour lbs/hr = Maximum daily PM₁₀ emissions (lb/day) divided by 24 hours.

⁴ Annual Tail Pipe (Exhaust) Lbs/Hr = Annual emissions (TPY) * (2000 hrs/yr) * (1 yr/8760 hours).

⁵ 24-hour fugitive dust emissions are based on 7.33 lbs/acre/day (0.11 ton/acre/month) (Midwest Research Institute 1996) PM₁₀, 20-hour workdays and 50% control efficiency.

⁶ Annual fugitive dust emissions are based on 5 months disturbance, assume one half of the plant site disturbed at any given time, 6 days per week, 20-hour workdays and assume a 50% control efficiency.

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Construction Activities Emission Rates - Model Input (90% PM10 Control for Equipment > 100hp)				
TAIL PIPE EMISSIONS ("EXHAUST")	<u>NO_x</u> ⁵ (g/s)	<u>CO</u> ⁵ (g/s)	<u>PM₁₀</u> ^{5,6} (g/s)	<u>SO₂</u> ^{5,6} (g/s)
Sitework (Earthwork and Civil) Equipment Construction Emissions				
Maximum Hourly	0.039	0.249	---	0.0033
Maximum 3-Hour	----	----	----	0.0033
Maximum 8-Hour	----	0.249	----	----
Maximum 24-Hour	----	----	0.0017	0.0027
Annual	0.011	----	0.00048	0.0010
Erection Support Equipment Construction Emissions				
Maximum Hourly	0.527	0.505	----	0.052
Maximum 3-Hour	----	----	----	0.052
Maximum 8-Hour	----	0.505	----	----
Maximum 24-Hour	----	----	0.0160	0.044
Annual	0.127	----	0.00433	0.012
TOTAL EMISSIONS (used as model input)				
Maximum Hourly	0.566	0.754	----	0.055
Maximum 3-Hour	----	----	----	0.055
Maximum 8-Hour	----	0.754	----	----
Maximum 24-Hour	----	----	0.0177	0.047
Annual	0.138	----	0.00481	0.013
FUGITIVE DUST EMISSIONS²				
			<u>PM₁₀</u> (g/s)	
Construction Dust (PM10) Emissions- Plant Site				
Maximum 24-Hour			0.0605	
Construction Dust (PM10) Emissions - Plant Site				
Annual			0.0214	

¹ For modeling purposes, the tailpipe ("Exhaust") emissions were split evenly between six point sources.

² Fugitive dust PM₁₀ emissions were modeled as a single volume source within the proposed plant construction site.